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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
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| 09/866,287      | 05/25/2001  | Eiji Yamakawa        | 15162/03680         | 4612             |

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EXAMINER

KUMAR, SRILAKSHMI K

ART UNIT PAPER NUMBER

2675

DATE MAILED: 05/03/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

**Application No.**

09/866,287

**Applicant(s)**

YAMAKAWA ET AL.

**Examiner**

SrilaKshmi K. Kumar

**Art Unit**

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 24 January 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 33-42 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 33-42 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

### DETAILED ACTION

The following office action is in response to amendment filed January 24, 2005. Applicant has cancelled claims 1-32 and added claims 33-42. The pending claims are 33-42.

#### *Claim Rejections - 35 USC § 103*

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 33-42 are rejected under 35 U.S.C. 103(a) as being unpatentable over Huang et al (US 5,748,277) in view of Nomura et al (US 6,236,385).

**As to independent claim 33**, Huang et al disclose a method for driving a liquid crystal display by applying AC pulses to a liquid layer, which comprises liquid crystal which exhibits a cholesteric phase having a selective reflection characteristic, through a plurality of scan electrodes and a plurality of data electrodes which face and cross each other (matrix), in which the scan electrodes are selected for scanning successively at specified time intervals (Figs. 1, 2A and 2B, col.2, lines 55-62), said method comprising; a reset step of applying a reset pulse (the preparation step/phase shown by Huang), which is to reset liquid crystal of the liquid crystal layer to a homeotropic state, to an area of the liquid crystal layer that corresponds to a selected one of the scan electrodes (col. 3, lines 42-46, col. 5, lines 58-63, col. 8, lines 8-25, 38-44);

Huang et al disclose an evolution step of applying an evolution pulse, which is to select a final state of the liquid crystal to an area of the liquid crystal layer (col. 3, lines 55-65, col. 10, lines 7-20).

Huang et al disclose a selection step of applying a selection pulse, which is to select a final state of the liquid crystal, to the area of the liquid crystal layer after the reset step, said final state of the liquid crystal being either a focal-conic state or a planar state (col. 3, lines 47-54, col.9, lines 40-42); the liquid crystal display displaying an image by switching the liquid crystal between a focal conic state and a planar state (col. 3, lines 2-36);

Huang et al disclose wherein a pulse applied to the selected one of the scan electrodes during the reset step has an amplitude which is larger than a maximum amplitude of pulses applied to each of the data electrodes (col. 3, lines 42-46, col. 5, lines 58-63, col. 8, lines 8-25, 38-44) and a pulse applied to the selected one of the scan electrodes during the evolution step has a polarity maintaining period which is longer than that of the pulsed applied to the selected one of the scan electrodes during the selection step (col. 3, lines 42-46, col. 5, lines 58-63, col. 8, lines 8-25, 38-44).

Huang et al do not disclose wherein a polarity maintaining period is longer than that of the selection pulse so that the reset pulse has an alternating cycle which is longer than that of the selection pulse. Nomura et al disclose the feature of wherein a polarity maintaining period is longer than that of the selection pulse so that the reset pulse has an alternating cycle which is longer than that of the selection pulse in Figs. 9A and 9B, and in col. 15, lines 20-45. In Figs. 9A and 9B, the pulse in T1, the reset period, is shown to have a longer amplitude than the pulse of the selection periods that follow. It would have been obvious to one of ordinary skill in the art to include wherein a polarity maintaining period is longer than that of the selection pulse so that the reset pulse has an alternating cycle which is longer than that of the selection pulse of Nomura

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et al into the system of Huang et al as Nomura et al discloses in col. 2, lines 51-59, where the write time is shorted and the flickering of the display is prevented.

Huang et al disclose wherein a pulse applied to the selected one of the scan electrodes during the evolution step has a polarity maintaining period which is longer than that of the pulse applied to the selected one of the scan electrodes during the selection (col. 10, lines 7-20);

Huang et al disclose wherein the maximum amplitude of the pulses applied to each of the data electrodes is lower than a threshold to change the state of the liquid crystal (col. 4, lines 20-28).

**As to independent claim 38**, limitations of claim 33, and further comprising, wherein, Huang et al disclose a liquid crystal display device comprising; a plurality of scan electrodes and a plurality of data electrodes crossed over the scan electrodes (col. 5, lines 53-57); and a liquid crystal layer sandwiched between the scan electrodes and the data electrodes, said liquid crystal layer including liquid crystal (col. 2, lines 55-62); and a driver which is connected to the scan electrodes and to the data electrodes (col. 5, lines 13-16).

**As to dependent claims 34 and 39**, limitations of claims 33 and 38, and further comprising, Huang et al disclose wherein a pulse applied to the selected one of the scan electrodes during the evolution step has an amplitude which is larger than a maximum amplitude of pulses applied to each of the data electrodes (col. 10, lines 7-20).

**As to dependent claims 35 and 40**, limitations of claims 33 and 38, and further comprising, Huang et al disclose wherein the time intervals to select the scan electrodes successively are determined based on a time defined by the selection pulse (col.4, lines 28-33).

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**As to dependent claims 36 and 41**, limitations of claims 33 and 38, and further comprising, wherein the liquid crystal exhibits bistability between a planar state and a focal-conic state (col.3, line 55-col. 4, line 33).

**As to dependent claims 37 and 42**, limitations of claims 33 and 38, and further comprising, wherein the maximum amplitude of the pulses applied to each of the data electrodes is lower than any pulses applied to the scan electrodes(col. 4, lines 20-28).

***Response to Arguments***

3. Applicant's arguments with respect to claims 1-32 have been considered but are moot in view of the new ground(s) of rejection.

As stated above, applicant has cancelled claims 1-32 and added claims 33-42.

With respect to applicant's arguments in regards to the combination of Huang with Nomura, Examiner, respectfully, disagrees. Huang discloses a display utilizing a chiral nematic or cholesteric, reflective bistable liquid crystal material and an electronics drive system for activating the display using efficient operation to provide high speed updating of the display. Nomura discloses a method of driving a liquid crystal display that uses a chiral nematic liquid crystal having two metastable states. In col. 3, lines 5-13, Nomura discloses using a chiral nematic liquid crystal as is used in Huang. Further, Nomura is disclosed in order to teach where in Figs. 9A and 9B, the pulse in T1, the reset period, is shown to have a longer amplitude than the pulse of the selection periods that follow. Further, the combination of Huang with Nomura is proper as Huang discloses where using chiral nematic materials cause the display to take longer to write the initial information to the display in col. 1, lines 43-55.

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Huang discloses where the liquid crystal display displaying an image by switching the liquid crystal between a focal conic state and a planar state in col. 3, lines 2-36. Huang further discloses lower voltage applied to reduce crosstalk in col. 10, lines 20-45.

### *Conclusion*

4. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Srilakshmi K. Kumar whose telephone number is 571 272 7769. The examiner can normally be reached on 10:00 am to 6:30 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Sumati Lefkowitz can be reached on 571 272 3638. The fax phone numbers for the

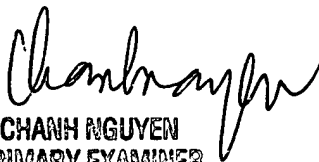
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organization where this application or proceeding is assigned are (703) 872-9306 for regular communications and (703) 872-9306 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 571-272-2600.

Srilakshmi K. Kumar  
Examiner  
Art Unit 2675

SKK  
April 25, 2005

  
**CHANH NGUYEN**  
**PRIMARY EXAMINER**